

REMARKS

Applicant respectfully requests the Examiner to reconsider the present application in view of the foregoing amendments to the claims.

Claims 1-18 and 20-21 are pending in the present application. Claim 1 has been amended, whereby page 4, lines 30-32 (i.e., urea derivatives, etc.) and the working examples of the present specification support this amendment. An instance of a working example supporting this amendment is found at page 60, lines 12-27 of the present specification. Here, Example 1 has an intermediate layer containing a latex of methyl methacrylate/styrene/2-ethylhexyl acrylate/hydroxyethyl methacrylate/acrylic acid copolymer (copolymerization weight ratio = 59/9/26/5/1) and 10 weight % aqueous solution of D-sorbitol (the heat-fusible solvent). Also, at page 73, lines 12-18, the protective layer of Example 2 contains a polymer latex having 27.5% of solid content (copolymer of methyl methacrylate/styrene/2-ethylhexyl acrylate/2-hydroxyethyl methacrylate/methacrylic acid = 59/9/26/5/1, glass transition temperature: 55°C) and 10 weight % of aqueous solution of succinimide (another heat-fusible solvent). The latexes contained in the intermediate layer and the protective layer are hydrophobic and thermoplastic organic binders. Further, page 18, starting at line 10 of the specification supports this amendment (the specification here describes the polymer latexes used as a hydrophobic and thermoplastic

organic binder, which includes a description of a latex of methyl methacrylate/2-ethylhexyl acrylate/styrene/acrylic acid copolymer at lines 13-14). Thus, no new matter has been added.

Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicant respectfully requests that the Examiner withdraw all rejections and allow the currently pending claims.

Issues Under 35 U.S.C. §§ 102(b) and 103(a)

The outstanding rejections are as follows:

- Claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Deroover et al. (U.S. patent No. 5,945,263; hereafter "Deroover '263");
- Claims 1-2 and 6-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Komamura (U.S. patent No. 4,948,698; "Komamura '698");
- Claims 1-18 and 2-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 0 803 764 A1 (EP '764) in combination with Deroover '263 and Komamura '698; and
- Claims 7-15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of EP '764, Deroover '263, and

Komamura '698 as applied to claims 1-20 above, and further in view of the specification disclosure on page 5.

Applicant respectfully traverses all of these rejections.

The Present Invention and Its Advantages

Some conventional photosensitive materials improve upon the sensitivity of the material itself, but often have the drawback of high performance fluctuation due to variations in the heat development temperatures (as Applicant describes in the present specification starting at page 1). Other conventional photosensitive materials solve this fluctuation problem encountered when heating the material at relatively high temperatures, but at the same time these materials have other problems, such as increased fog and decreased sensitivity.

In contrast, the present invention has achieved a photothermographic material having high sensitivity, high developing speed, and little or no performance fluctuation due to a variation in the heat development temperatures. Specifically, the present invention is directed to a photothermographic material comprising at least (a) a photosensitive silver halide, (b) a silver salt of an organic acid, (c) a reducing agent, (d) a hydrophobic and thermoplastic organic binder on a support, and (e) a heat-fusible solvent. In the present invention, the heat-fusible solvent is solid

at an ordinary temperature and can be fused at a heat development temperature. Further, a layer other than the image forming layer contains this heat-fusible solvent and the hydrophobic and thermoplastic organic binder. Finally, the heat-fusible solvent is selected from the group consisting of urea derivatives, amide derivatives, sulfonamide derivatives, polyhydric alcohols and polyethylene glycols.

Even the advantages of the present invention have been experimentally confirmed. As described in the present specification, the present invention has unexpectedly achieved less fog and better Dmin and Dmax values over conventional photosensitive materials (see disclosure regarding Inventive Samples; for more details on the advantages of the specification, please refer to Applicant's "Amendment Under 37 C.F.R. § 1.111", filed August 23, 2002, starting at page 5).

In contrast, the cited references, whether used individually or in combination, fail to disclose all features and advantages of the present invention.

Distinctions over Deroover '263, Komamura '698, EP '764/Deroover '263/Komamura '698, and EP '764/Deroover '263/Komamura '698/specification at page 5

(A) Deroover '263

The cited Deroover '263 reference discloses a photothermographic material containing a polyethylene wax in an antistatic layer. The Office Action further refers Applicant to Col. 17, lines 30-35, whereby the polyethylene wax is described as being equivalent to a heat solvent. However, Applicant respectfully refers the Examiner to presently pending claim 1, wherein the heat-fusible solvent has been defined as being selected from urea derivatives, amide derivatives, sulfonamide derivatives, polyhydric alcohols and polyethylene glycols. Deroover '263 fails to disclose a urea derivative, amide derivative, sulfonamide derivative, polyhydric alcohol or polyethylene glycol as instantly claimed. Thus, Applicant respectfully submits that this rejection is instantly overcome.

Because "a claim is only anticipated if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," the cited Deroover '263 reference cannot be a basis for a rejection under § 102(b). See *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, due to the lack of

disclosure of all claimed features, the rejection in view of Deroover '263 is overcome.

(B) Komamura '698

Applicant submits that the rejection under § 103(a) in view of Komamura '698 is overcome as well.

The Komamura '698 reference discloses heat-processible color photographic materials, whereby the Office Action refers to parts of Cols. 22, 23, 37 and 21. Applicant also refers the Examiner to Col. 31, lines 38-53, which discloses thermal solvents and gelatin are contained in the image-forming layer of the photographic material. Gelatin is not a hydrophobic and thermoplastic organic binder.

Thus, Applicant submits that the cited Komamura '698 reference fails to disclose a heat-fusible solvent and a hydrophobic and thermoplastic organic binder in a layer other than the image-forming layer as instantly claimed. Accordingly, Applicant respectfully submits that Komamura '698 fails to disclose all features as instantly claimed, and this rejection is also overcome (a *prima facie* case of obviousness requires disclosure in the Komamura '698 reference of all features as instantly claimed in the present invention). Withdrawal and reconsideration is respectfully requested.

(C) The Combination of EP '764, Deroover '263, and Komamura '698, and the Combination of EP '764, Deroover '263, Komamura '698, and page 5 of the present specification

Applicant submits that the other remaining rejections are overcome because none of the requirements for a *prima facie* case of obviousness has been satisfied.

The cited EP '764 reference fails to disclose heat-fusible solvents. Reference is made to parts of EP '764 in the Office Action, but these cited parts do not describe any heat-fusible solvent. Thus, EP '764 lacks disclosure of all claimed features.

Further, the other cited references of Deroover '263 and Komamura '698 fail to account for the deficiencies of EP '764 or each other, and the requisite motivation and reasonable expectation of success is also lacking in the instant case.

U.S. case law squarely holds that a proper obviousness inquiry requires consideration of three factors:

- the prior art reference (or references when combined) must teach or suggest all the claim limitations;
- whether or not the prior art would have taught, motivated, or suggested to those of ordinary skill in the art that they should make the claimed invention (or practice the invention in case of a claimed method or process); and

- whether the prior art establishes that in making the claimed invention (or practicing the invention in case of a claimed method or process), there would have been a reasonable expectation of success.

See *In re Vaeck*, 947 F.2d, 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); see also *In re Kotzab*, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000); *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). Here, none of these requirements has been satisfied.

As mentioned, EP '764 is already deficient by not disclosing heat-fusible solvents. Further, the cited Deroover '263 and Komamura '698 references do not account for the deficiencies of EP '764. As mentioned, the described polyethylene wax in Deroover '263 is not a part of the present invention. Further, Deroover '263 fails to disclose a urea derivative, amide derivative, sulfonamide derivative, polyhydric alcohol or polyethylene glycol as instantly claimed. Thus, both EP '764 and Deroover '263 fail to disclose the heat-fusible solvent as instantly claimed. In addition, all three references fail to disclose a heat-fusible solvent and a hydrophobic and thermoplastic organic binder in a layer other than the image-forming layer as instantly claimed.

Applicant further submits that one having ordinary skill in the art would not be motivated or reasonably expect to be successful in combining the cited references (and with the present specification at

page 5) in order to achieve the present invention. This is for the following reasons.

The Office Action states it would have been obvious to use the heat solvent of Deroover '263 and Komamura '698 in certain layers into the material of EP '764 (page 4 of the Office Action). However, Applicants first note that Deroover '263 and Komamura '698 already have deficiencies themselves (see above), and the present invention would not be achieved anyway.

Second, one having ordinary skill in the art would not combine the primary EP '764 reference with the other cited references (or the specification) due to the teaching away present in EP '764. Any cited reference used for a rejection under 35 U.S.C. § 103(a) must be considered in its entirety, i.e., as a whole, including those portions that would lead away from a claimed invention. See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). In other words, the EP '764 reference must be read in its entirety, including the teaching away that using certain binders will lead to drawbacks. Here, EP '764 specifically discloses that using photosensitive materials with gelatin, polyvinyl alcohol, polyacetal or other water-soluble polymers as the binder will lead to drawbacks, such as increased fog (see page 2, lines 45-48).

The secondary Komamura '698 reference discloses a heat-processible color photographic material having a silver halide, a reducing agent, a binder, and dye-providing material of formula (1) (see Abstract; Col. 2, lines 5-25). The binder can be gelatin, gelatin derivatives, polyvinyl alcohol, or polyvinyl acetate (Col. 22, lines 28-38). The preferred binder in Komamura '698 is even a mixture that includes gelatin (Col. 22, lines 41-43).

Thus, one having ordinary skill in the art, upon reading the whole disclosure of EP '764, would not combine the primary EP '764 reference with Komamura '698 because EP '764 specifically describes the drawbacks of using gelatin, polyvinyl alcohol, and polyacetal as a binder. EP '764 specifically teaches one having ordinary skill in the art away from achieving the present invention, and that person having ordinary skill in the art would not refer to Komamura '698 because this reference discloses gelatin is a preferred binder, which leads to increased fog (as disclosed by EP '674). Thus, Applicants respectfully submit that the other rejections under § 103(a) are overcome as well because the cited references (and when combined with the present specification at page 5) have been improperly combined.

There is an additional reason as to why the references have been improperly combined. Combining the cited references (wherein Applicants believe this combination is improper) would amount to a photographic material having many combinations, including a

combination of a silver halide, binder (i.e., gelatin), and an antihalation dye of formula (I) (of Deroover '263). However, picking and choosing the right ingredients in order to achieve the present invention (though Applicant submits that the present invention is still not being achieved upon such a combination) amounts to an invitation to experiment and an "obvious to try" rationale. Such an "obvious to try" rationale is improper for an analysis of patentability under § 103(a). See *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1599 (CAFC 1988) (In the *In re Fine* decision, the CAFC reversed the BPAI by stating: "The Board reiterated the Examiner's bald assertion that 'substitution of one type of detector for another in the system of Eads would have been within the skill of the art,' but neither of them offered any support for or explanation of this conclusion.") (emphasis added); see also *In re Deuel*, 34 USPQ2d 1210, 1216 (CAFC 1995) (where the court states: "Obvious to try" has long been held not to constitute obviousness. A general incentive does not make obvious a particular result, nor does the existence of techniques by which those efforts can be carried out") (citing *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1680-1681 (CAFC 1988)). One having ordinary skill in the art would have to overcome the teaching away present in EP '674, and then experiment with the many possible combinations (which is improper).

Also, combining the cited references would require that the antihalation dye of formula (I) of Deroover '263 to be inserted into the material of EP '674 (the primary reference), which is not presently claimed.

Thus, Applicant respectfully submits that these rejections that combine EP '674, Deroover '263, and Komamura '698, and EP '674, Deroover '263, Komamura '698, and the specification at page 5, are overcome for the above stated reasons.

Regarding the specification at page 5 and the last cited rejection in the Office Action (at page 4), Applicant respectfully submits that the disclosure in the present specification has been improperly combined with EP '764, Deroover '263, and Komamura '698 for a further reason.

The Examiner has taken the position that the disclosure on page 5, lines 12-20 of the present specification is an admission that the listed references teach heat-fusible solvents. Applicant respectfully disagrees. The present specification does not state that the cited references disclose that the claimed heat-fusible solvent and hydrophobic and thermoplastic organic binder as being located in a layer other than the image forming layer. This is one distinction over the asserted combination.

In addition, the references cited in the present specification are a part of the background of the specification to illustrate that

none of the prior photosensitive materials or methods can achieve the all of the unexpected advantages of the present invention. As mentioned, the present invention has achieved high sensitivity, high developing speed, and little or no performance fluctuation due to a variation in the heat development temperatures in its presently claimed photothermographic materials. This cannot be said of any of the cited references. In other words, one of ordinary skill in the art would not readily combine the cited references with the present specification because the present invention has unexpectedly achieved all characteristics of high sensitivity, high developing speed, and little or no performance fluctuation due to a variation in the heat development temperatures.

Thus, Applicant submits that the present specification has also been improperly combined with the cited EP '764, Deroover '263, and Komamura '698 references.

(D) *Conclusion*

Accordingly, a *prima facie* case of obviousness cannot be said to exist, since the cited references (and the present specification at page 5), in any combination, fails to disclose a heat-fusible solvent and hydrophobic and thermoplastic organic binder that are located in a layer other than the image forming layer. The rejection under § 102(b) is also overcome because there is no disclosure of all claimed

features in the cited Deroover '263 reference. Thus, Applicant respectfully requests the Examiner to reconsider, and to withdraw all rejections and allow the currently pending claims.

A full and complete response has been made to the Office Action. The Examiner is respectfully requested to pass the application to issue.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Eugene T. Perez (Reg. No. 48,501) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

Pursuant to 37 C.F.R. § 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application. The required fee of \$110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

(Rev. 02/20/02)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows:

1. (Twice Amended) A photothermographic material comprising at least (a) a photosensitive silver halide, (b) a silver salt of an organic acid, (c) a reducing agent and (d) a hydrophobic and thermoplastic organic binder on a support; and (e) a heat-fusible solvent that is solid at an ordinary temperature and can be fused at a heat development temperature;

wherein [the heat-fusible solvent is in a layer other than the image forming layer.] a layer other than the image forming layer contains said heat-fusible solvent and said hydrophobic and thermoplastic organic binder; and

the heat-fusible solvent is selected from the group consisting of urea derivatives, amide derivatives, sulfonamide derivatives, polyhydric alcohols and polyethylene glycols.